

CLAIMS

- 1) In a computer having a texture engine, a method of pattern matching for recognition of objects within an image, the method comprising:

deriving at least one target primitive representative of the image;

forming at least one basis from said at least one target primitive;

in the texture engine, determining, for each one of said at least one basis, an affine invariant representation of said at least one target primitives; and

identifying, using said affine invariant representation, at least one predefined model primitives that at least partially matches said at least one target primitives.

- 2) The method as claimed in claim 1 wherein determining said affine invariant representation comprises applying a transformation matrix on said target primitives.
- 3) The method as claimed in claim 2 wherein applying said transformation matrix comprises defining said transformation matrix using said at least one basis.
- 4) The method as claimed in claim 1 wherein said computer further comprises a host processor, and wherein said deriving, said forming and said identifying are performed

in said host processor in parallel with said determining performed in said texture engine.

- 5) The method as claimed in claim 1 further comprising storing said affine invariant representation in a surface in memory accessible by said texture engine.
- 6) The method as claimed in claim 5 wherein said texture engine further comprises a vertex buffer, said vertex buffer receiving said at least one target primitive.
- 7) The method as claimed in claim 6 wherein determining said affine invariant representation comprises applying a transformation matrix on said target primitives.
- 8) The method as claimed in claim 7 wherein applying said transformation matrix comprises defining said transformation matrix using said at least one basis.
- 9) The method as claimed in claim 8 wherein said texture engine further comprises a vertex shader, said vertex shader applying a transformation matrix on said at least one primitive.
- 10) In a computer having a texture engine, a method of pattern matching for recognition of objects within an image, the method comprising :

deriving at least one target primitive representative of the image;

forming at least one basis said at least one target primitive;

determining, for each one of said at least one basis, an affine invariant representation of said at least one target primitives;

identifying, using said affine invariant representation, at least one predefined model primitives that at least partially matches said at least one target primitives; and

in said texture engine computing, for said affine invariant representation, a proximity score indicative of the degree of conformance between the identified model primitives and said target primitives.

- 11) The method as claimed in claim 10 wherein computing said proximity score comprises:

applying a target matrix transformation to said at least one target primitives;

applying a model matrix transformation to said at least one model primitives; and

in said invariant representation, computing a transformed proximity score indicative of the degree of conformance between the transformed model primitives and said target primitives.

- 12) The method as claimed in claim 11 wherein applying said target transformation matrix to said at least one target primitives comprises defining said target transformation matrix using said at least one target basis, and wherein applying said model transformation matrix to said at

least one model primitives comprises defining said model transformation matrix using said model basis.

- 13) A computer used for recognition of objects within an image, said computer comprising:

a host processor receiving said image, deriving at least one target primitive representative of the image and forming at least one basis from said at least one target primitive;

a texture engine, connected to said host processor, for determining, for each one of said at least one basis, an affine invariant representation of said at least one target primitives; and

said host processor for identifying, using said affine invariant representation, at least one predefined model primitives that at least partially matches said at least one target primitives.